

Message Text

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PAGE 01 STATE 063439

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C O N F I D E N T I A L STATE 063439

EXCON

E.O. 11652: XGDS-1

TAGS: ESTC, COCOM

SUBJECT: COCOM LIST REVIEW - IL 1544 DIODES

REF: OECD PARIS 6956

FOLLOWING ARE COMMENTS FOR AD REF REDEFINITION OF PARAGRAPH
4 OF REFTEL:

- A) RETAIN LIMIT OF 12.5 GHZ.
 - B) ACCEPT JAP FIGURE OF 3 GHZ.
 - C) RETAIN PRESENT IL COVERAGE OF VOLTAGE VARIABLE CAPACITOR DIODES. WE FEEL PRESENT PARAMETERS ARE SUFFICIENTLY LIBERAL TO ALLOW SHIPMENT MORE STRATEGIC TYPES.
 - D) PREFER FOLLOWING: QUOTE TUNNEL DIODES WITH A RESISTIVE CUTOFF FREQUENCY IN EXCESS OF 5 GHZ UNQUOTE. TUNNEL DIODES ARE USUALLY NOT CHARACTERIZED IN TERMS OF OPERATING FREQUENCY. FOR GOOD LOW NOISE AMPLIFICATION
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PAGE 02 STATE 063439

ONE NEEDS A DIODE WITH A RESISTIVE CUTOFF FREQUENCY OF

4 OR 5 TIMES THE OPERATING FREQUENCY. THE SAME CHARACTERIZATIONS ARE EQUALLY VALID FOR SWITCHING APPLICATIONS AND FIND NO VALID JUSTIFICATION FOR SEPARATING THE TUNNEL DIODES AS PROPOSED IN (D) AND (G) OF REFTTEL.

E) TWG PROPOSAL ON PIN DIODES ACCEPTABLE.

F) REDEFINE AS FOLLOWS:

QUOTE FAST RECOVERY POWER DIODES (RECTIFIERS) HAVING
(1) A MAXIMUM REVERSE BREAKDOWN VOLTAGE OF 40 VOLTS OR LESS, A RATED FORWARD RECTIFIED CURRENT OVER 5 AMPERES AND A MAXIMUM RECOVERING TIME OF LESS THAN 15 NANOSECONDS;
OR (2) A MAXIMUM REVERSE BREAKDOWN VOLTAGE OF MORE THAN 40 VOLTS, A RATED FORWARD RECTIFIED CURRENT OF OVER 1 AMPERE AND A MAXIMUM RECOVER TIME OF LESS THAN 100 NANOSECONDS UNQUOTE.

THORNTON REPORTS THAT HE HAS TAKEN A FURTHER LOOK AT THIS AREA AND FINDS THAT THERE IS A CRITICAL CONCERN WITH HIGHER VOLTAGE DEVICES WHICH FALL IN THE 70 NANOSECONDS RECOVERY TIME AREA. THE HIGHER CURRENT FASTER SWITCHING TIME UNITS ARE AVAILABLE BUT THE VOLTAGE CAPABILITIES ARE VERY LOW. ALL INDICATIONS ARE THAT THERE IS NO BLOC CAPABILITY IN THIS AREA AND THEY CERTAINLY HAVE THE SAME NEED AS THE US MILITARY FOR THE SAVINGS IN SIZE AND WEIGHT OF EQUIPMENT AFFORDED BY THESE UNITS.

G) REDEFINE AS FOLLOWS:

QUOTE SWITCHING AND SMALL SIGNAL DIODES HAVING A RATED MAXIMUM REVERSE RECOVERY TIME OF LESS THAN 1 NANOSECOND UNQUOTE.

H) THIS SECTION DEALING WITH VARACTOR AND MULTIPLIER PRESENTS MANY DIFFICULTIES. A SPECIFIC COUNTERPROPOSAL IS NOT AVAILABLE. THE TWG FORMULATION PROPOSES CONTROL BASED ON RATED OUTPUT FREQUENCIES AND THE PRODUCT OF THE OUTPUT FREQUENCY TIMES THE INPUT POWER. A CHECK OF THE RATINGS OF SUCH UNITS INDICATE THAT THE DEVICES ARE TYPICALLY CHARACTERIZED IN TERMS OF POWER DISSIPATION, JUNCTION RESISTANCE OR RESISTIVE CUTOFF OF FREQUENCY, AND JUNCTION CAPACITANCE. IN CASES WHERE OUTPUT FREQUENCIES ARE CITED THERE MAY BE NUMEROUS NUMBERS CITED AND VARIOUS MULTIPLICATION FACTORS. ANOTHER PROBLEM IS THAT THERE IS NO EVIDENCE OF SIGNIFICANT BLOC CAPABILITY IN THIS AREA, NOR IS THERE AN INDICATION

CONFIDENTIAL

PAGE 03 STATE 063439

OF ANY SIGNIFICANT CIVIL END USE REQUIREMENTS FOR SUCH DIODES AT FREQUENCIES WHICH THE PROPOSED DRAFT WOULD RELEASE. THERE IS SYMPATHY FOR A FORMULATION WHICH WOULD RELEASE DIODES USED FOR 420 TO 470 MHZ TRANSMITTERS AND SIMILAR APPLICATIONS. THERE ARE PROBLEMS WITH RESPECT TO DEVICES FOR USE AT THE HIGHER FREQUENCIES AND FEEL THAT FINAL FIGURES WILL DEPEND IN PART ON ULTIMATE FORM OF IL 1545.

I) REDEFINE AS FOLLOWS:

QUOTE OSCILLATOR AND BULK EFFECT DEVICES (USED IN THE
DIRECT CONVERSION OF DC TO RF POWER) DESIGNED OR RATED
FOR USE AT OUTPUT FREQUENCIES GREATER THAN 1 GHZ, EXCEPT
THOSE DESIGNED OR RATED FOR USE AT A FREQUENCY OF 12.5
GHZ OR LESS AND HAVING AN OUTPUT POWER NOT EXCEEDING
20 MILLIWATTS UNQUOTE. WE CANNOT ACCEPT PROPOSED AN.

THE DRAFT OF SUB-ITEM (I) WITHOUT AN UPPER FREQUENCY
LIMIT IS NOT ACCEPTABLE. THE RELAXATION OF 20
MILLIWATT UNITS UP TO 12.5 GHZ IS A SIGNIFICANT CONCESSION
AND WE WOULD NOTE THAT ALTHOUGH THERE ARE INDICATIONS OF
BLOC RESEARCH CAPABILITIES IT IS DOUBTED THAT SUCH
SERIAL PRODUCTION CAPABILITY EXISTS. INGERSOLL

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